

AUG 07 2003

GROUP 1

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Amendments to the Claims:

Please delete Claims 20-30 from the application without prejudice.

1. (original) An adjustable assembly for a powered rotating brush member operating in a surface maintenance vehicle, comprising:

a brush assembly housing member having a first aperture and a second aperture formed therein in spaced apart relation and a cam-receiving location on a first side thereof, and,

a substantially cylindrical brush member having an axis of rotation and a first rotary attachment location at a first end at said axis of rotation and having a second rotary attachment location at a second end and at least one of said first end and second end is connected via a coupling mechanism to the brush assembly housing member;

wherein said coupling mechanism further comprises a pivotable cam member having a threaded bore of diameter approximately equal to a diameter of said first aperture of the brush assembly housing member extending from a first side of the pivotable cam member to an interior portion of the pivotable cam member and an adjustment head member spaced from the threaded bore so that when the bore and the first aperture are aligned on the first side of said brush assembly housing member, a threaded connecting member having an enlarged head may be inserted from a second side of the brush assembly housing member through the first aperture and into the bore to thereby connect and couple the pivotable member to the brush assembly housing member so that the adjustment head member protrudes through the second aperture and a second side opposite the first side of said pivotable cam member engages a first ring portion of a rotary bearing assembly and a second ring portion of said rotary bearing assembly engages the substantially cylindrical brush member.

2. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 1, wherein said rotary bearing assembly further comprises a second ring portion spaced from the first ring portion and said second ring portion is

coupled to the substantially cylindrical brush member and wherein a material designed to reduce friction between said first ring portion and said second ring portion is disposed in the space between said first ring portion and second ring portion.

3. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 1, further comprising an extension member mechanically coupled to the pivotable cam member on a first side of the extension member and wherein a second side of said extension member engages said first ring portion.

4. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 1, wherein said brush assembly housing member further comprises a removable cover portion mechanically connected to said housing.

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5. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 1, wherein said pivotable cam member is a first and a second interlocking member and said bore extends through the first interlocking member and into a threaded blind hole disposed in said second interlocking member and further comprising a ridge member formed adjacent the threaded blind hole and protruding from the second interlocking member which engages a corresponding elongate recess formed in the first interlocking member to inhibit motion therebetween.

6. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 5, wherein the ridge member is formed as at least one pin member and the elongate recess is formed to correspond to the at least one pin.

7. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 1, wherein the adjustment head is a separate piece from

said pivotable cam member and is suitable bonded into a port formed in said pivotable cam member.

8. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 1, wherein the pivotable cam member is fabricated of at least one of the following materials: metal, powdered metal, ceramic, composite, resin-based, and any of the above further comprising fiber-impregnation or heat tempering and wherein the pivotable cam member is fabricated by any one or more of the following: cast, milled, molded, sculpted or etched into appropriate shape.

9. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 1, wherein the first aperture is substantially round and the second aperture is substantially elongate in shape.

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10. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 1, wherein:

a power source for rotating said substantially cylindrical brush member is a select one of the following:

an electrical motor

an internal combustion motor,

a pneumatic motor, or,

a hydraulic motor; and

wherein the power source is coupled to the substantially cylindrical brush member via a select one of the following:

a direct drive coupling from said power source,

a reduction gear coupled by a continuous belt to a drive gear which couples to the power source,

a linear actuator,

a leadscrew,
a continuous cable, or,
a belt member coupled to the power source which propels the surface maintenance vehicle.

11. (original) An adjustable assembly for a rotating brush member operating in a surface maintenance according to claim 10, wherein the location the power source is coupled to the substantially cylindrical brush member is a select one of the following:

at a first end of said substantially cylindrical brush member;
at a second end of said substantially cylindrical brush member; and,
at a discrete location between said first end and said second end of said substantially cylindrical brush member.

A1 12. (original) An adjustable assembly for one of a pair of counter-rotating brush members operating in a surface maintenance vehicle, comprising:

a housing member having a first aperture and a second aperture, spaced from the first aperture, wherein said second aperture has an elongate shape;

a substantially cylindrical first brush member having a first attachment location disposed at a first end and having a second attachment location disposed at a second end and each of said first end and second end rotatably coupled to the housing member;

a substantially cylindrical second brush member, closely spaced from the substantially cylindrical first brush member, having a first attachment location disposed at a first end and having a second attachment location disposed at a second end and each of said first end and second end rotatably coupled to the housing member;

a first cam member pivotably coupled to the housing member at the first attachment location, wherein the first cam member has an adjustment head protruding from a first side

which emerges from first aperture of the housing member and a bore spaced from the adjustment head and a ridge-receiving elongate recess formed on a second side;

18 a second cam member mechanically coupled to the second side of the first cam member on a first side of the second cam member and wherein the first side of the second cam member has a threaded blind hole formed therein aligned with the first aperture of the housing member and a ridge feature formed thereon corresponding to said ridge-receiving elongate recess and a second side of said second cam member engages an first ring portion of a bearing assembly, wherein the bearing assembly has an outer ring portion coupled to the rotational axis of the substantially cylindrical brush member;

25 wherein said first aperture is adapted to receive the adjustable head member and said second aperture is adapted to receive an elongate shank member having an enlarged head and wherein the elongate shank member provides mechanical engagement between the first cam member and the second cam member.

A 13. (original) An adjustable assembly according to claim 12, further comprising a motive force mechanically coupled to the second attachment location of the substantially cylindrical brush member for driving said brush member at a changing rate of rotation.

14. (original) An adjustable assembly according to claim 13, wherein said motive force provides an adjustable magnitude output force so that when said motive force is increased the substantially cylindrical brush member rotates more rapidly and when said motive force is decreased the substantially cylindrical brush member rotates less rapidly.

15. (original) An adjustable assembly according to claim 13, further comprising a first and a second substantially cylindrical brush member coupled to the housing and disposed with substantially parallel axes of counter-rotation and spaced apart with each contacting a surface to be cleaned such that said first and said second substantially cylindrical brush members cooperate together to urge particles and debris present on said surface to be cleaned away from said surface.

16. (original) An adjustable assembly according to claim 15, further comprising a debris capture vessel configured to temporarily collect said particles and debris.

17. (original) An adjustable assembly according to claim 13, wherein said motive force is an electrical motor coupled to the second attachment location via at least one belt member driving a first driven gear member and via a second driven gear member which is coupled to the rotational axis of the substantially cylindrical brush member.

18. (original) An adjustable assembly according to claim 15, further comprising a second motive force coupled to the second substantially cylindrical brush member for driving said second substantially cylindrical brush member in a direction of rotation opposite the direction of rotation of said first substantially cylindrical brush member.

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19. (original) An adjustable assembly according to claim 12, wherein said first cam member further comprises a pin-receiving recess formed in one of said major surfaces of the first cam member; and,

wherein the second cam member further comprises a pin formed on said first side corresponding to said pin-receiving recess of the first cam member.

20. (withdrawn)

21. (withdrawn)

22. (withdrawn)

23. (withdrawn)

24. (withdrawn)

25. (withdrawn)

26. (withdrawn)

27. (withdrawn)

28. (withdrawn)

29. (withdrawn)

30. (withdrawn)

31. (original) An adjustable assembly, comprising:

an elongate rotary brush member having a longitudinal axis of rotation;

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a first rotational mounting structure coupled to the elongate rotary brush member at the longitudinal axis at a first end of the elongate rotary brush member and a second rotational mounting structure coupled to the elongate rotary brush member at the longitudinal axis at a first end of the elongate rotary brush member so that said elongate rotary brush member freely rotates about said longitudinal axis;

an adjustable mechanism disposed adjacent but spaced from the first rotational mounting structure; and,

a source of rotational motion coupled to the second end of the elongate rotary brush;

wherein said adjustable mechanism has a pivot head member disposed at a pivot axis of said adjustable mechanism and the adjustable mechanism pivots on the axis between a partially-released state and a fully-coupled state when the pivot head member pivots about the pivot axis, and,

(i) in the event that the adjustable release mechanism is in the partially-released state said first rotational mounting structure may translate while the elongate rotary brush member

remains coupled to said first rotational mounting structure and said second rotational mounting structure, and,

(ii) in the event that the adjustable release mechanism is in the fully-coupled state said first rotational mounting structure may not translate.

32. (new) An adjustable assembly comprising: (60) (64)
a housing member having a first aperture and a second aperture spaced from the first aperture; (24) (66)

(34) a first cam having an adjustment head protruding from a first side and a bore spaced from the adjustment head, the bore and the head positioned to correspond to the first and second aperture, respectively;

(40) (75) a second cam member having a first side with a third aperture aligned with the first aperture of the housing member and a second side of the second cam member adapted to engage a bearing assembly; and

(70) a fastener extending through the first aperture and the bore and engaging the third aperture.

33. (new) The assembly of claim 32, wherein the first aperture is elongated and adapted to allow the fastener to travel longitudinally along the first aperture by rotating the adjustment head.

34. (new) The adjustable assembly of claim 33, wherein corresponding locating structures are placed in a second side of the first cam and the first side of the second cam.

35. (new) The assembly of claim 34, wherein the locating structures include a pin-receiving recess formed in a second side of the first cam member; and a corresponding pin formed on the first side the second cam member.

36. (new) The assembly of claim 33, and further comprising a rotary brush assembly coupled to the second cam member.

37. (new) The assembly of claim 36, and further comprising a motive force coupled to the rotary brush assembly.

38. (new) The assembly of claim 32, wherein the third aperture is threaded.